

# The Role of Temporo-Mandibular Joint (TMJ) Structure in Orthognathic Surgery

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## Description

It is very important to clarify the relationship between a dentofacial structure and a Temporo Mandibular Joint (TMJ) structure in orthognathic surgery. Recently, it was reported that the skeletal and occlusal patterns were associated with the TMJ morphology, including the disk position. In orthognathic surgery, some surgeons state that alterations in the condylar position from surgery can lead to malocclusion associated with the risk of early relapse, and also favor the development of temporo mandibular disorders.

## Temporo Mandibular Joint

For these reasons, several positioning devices have been proposed and applied, but now there is no scientific evidence to support the use of condylar positioning devices. There are some reasons why scientific evidence cannot be obtained; however, it also includes the question of whether the preoperative position of the condyle is the desired postoperative position. The purpose of this study was to verify the desired condylar position in orthognathic surgery, based on literature on the postoperative condylar position in orthognathic surgery. From the studies reviewed, it was suggested that the preoperative position of the condyle was not the desired postoperative position in orthognathic surgery.

Hypertriglyceridemia can induce repeated pancreatitis, which may lead to life-threatening complications that are very difficult to cure. The exact mechanism is unclear, but it is believed to involve increased concentrations of chylomicrons in the blood. We report the case of a man aged 26 years with recurrent pancreatitis related to hypertriglyceridemia. The cause of his hypertriglyceridemia was diagnosed as familial. He had experienced repeated pancreatitis since he was 18 years old, and the attack frequency in the previous 2 years had increased from once per 3 months to once per 1.5 months. He had received diet modification, medication, and even apheresis, but the effects were not satisfactory. He finally underwent laparoscopic mini-gastric bypass surgery as a mode of metabolic surgery on August 1, 2011. His triglyceride level decreased rapidly after the surgery. This result indicates that gastric bypass surgery may be applied not only to bariatric surgery but may also be used as a treatment option for patients with intractable hypertriglyceridemia-related pancreatitis.

Gallstones and excessive alcohol consumption are the two main causes of pancreatitis, accounting for 80–90% of all cases. The remaining 10–20% of pancreatitis cases have various causes, including drugs, trauma, and infection. In up to 7% of all cases of pancreatitis, hypertriglyceridemia or chylomicronemia is the underlying cause.

Hypertriglyceridemia is often caused and exacerbated by uncontrolled diabetes mellitus, obesity, and sedentary habits. Genetic disorders are also some of the known causes. Removal of the offending medications, lifestyle modification, and drug treatment should be considered in patients with hypertriglyceridemia. Apheresis is also proposed for serum triglyceride (TG) removal in the treatment and prevention of hypertriglyceridemia-induced pancreatitis.

Metabolic surgery, defined as surgery aimed at anatomic and functional changes to treat metabolic disorders, has been proposed as an effective treatment for resolving hypertriglyceridemia. The jejunoileal bypass was the first bariatric surgery that resulted in a significant reduction in plasma lipids. A partial ileal bypass was then proposed as a treatment option for hyperlipidemia without a bariatric effect. Recently, a gastric bypass has become the most commonly performed bariatric surgery and it is highly effective in the resolution of hyperlipidemia. Therefore, the gastric bypass should be a treatment option for obese patients with hypertriglyceridemia-induced pancreatitis.

In this study, we report the first case of Laparoscopic Mini-Gastric Bypass (LMGB) as a means of metabolic surgery for the treatment of intractable hypertriglyceridemia-related pancreatitis. Hypertriglyceridemia is the most common cause of acute pancreatitis after gallstones and alcohol consumption. The causes of hypertriglyceridemia can be primary (familial) or secondary (insulin resistance, hypothyroidism, drugs, pregnancy). The exact mechanism of hypertriglyceridemia-related pancreatitis is unclear. Chylomicrons, which are TG-rich lipoprotein particles, are believed to be responsible for pancreatic inflammation. However, hypertriglyceridemia-related pancreatitis rarely occurs if TG levels are lower than 500 mg/dL. People with hypertriglyceridemia-related pancreatitis usually have TG levels exceeding 1000 mg/dL.

To treat hypertriglyceridemia, the initial methods include lifestyle modification and use of drugs (fibrates, nicotinic acid). The rate of plasma TG response to diet and weight loss is

approximately 25%, with marked variation among patients. Fibrates can reduce TG levels by as much as 50%, and daily consumption of up to 3 g of nicotinic acid (niacin) can lower TG levels by as much as 45%.

Apheresis for high TG levels was first reported in 1978 to treat severe diabetic hypertriglyceridemia. This procedure can remove chylomicrons directly in the acute stage or be implemented as a chronic prophylaxis at 4-week intervals for recurrent pancreatitis

due to severe primary hypertriglyceridemia unresponsive to drug and diet adjustment. One series of seven patients with an average TG level of 1406 mg/dL had a 41% decrease in TG levels after one plasma exchange session. Nevertheless, the effect of apheresis is transient, and repeated procedures may be needed. In our patient, the TG level rebounded to almost 4000 mg/dL approximately 3 weeks after apheresis.